

Subspeciation in the austral African Thick-billed Lark

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The range of the Thick-billed Lark *Galerida magnirostris* (Stephens), 1826: near Cape Town, of the extreme south-west of the Afrotropics is limited to country extending from *c.* 28°S in Namibia south to Cape Agulhas in the west and to about 29°25'E on the Lesotho/Natal border in the east. In the western and central parts of its distribution it affects coastal districts and agricultural land, and is a characteristic species of the Karoo sector of the interior of the Cape, to the east of which it occurs in grassland on the continental plateau and the alpine zone of the Drakensberg Mts. While it is in the main sedentary, in the eastern highland parts of the range there is a measure of post-breeding altitudinal movement.

The main climatic zones and variable habitat-types affected by this lark are reflected in a regionally disposed sequence of mensural and plumage colouration variables, with heavily billed and reddish populations present over much of the west and somewhat greyer and finer billed differentiates in the more mesic east. The subspecific variation in so far as it affects Cape birds was considered by Winterbottom (1957). The whole species was first adequately reviewed some twenty years ago by Quickelberge (1970), when three subspecies of this southern African endemic lark species were recognised: the nominate race; *G. m. harei* (Roberts), 1924: Philipstown, northeastern Cape; and *G. m. montivaga* (Vincent), 1948, from the eastern Lesotho highlands. In an earlier communication, Clancey (1963) demonstrated that it was perhaps desirable to recognise a further subspecies from the singularly arid northwestern sector of the species' range, but Quickelberge viewed the population in question as part of *G.m. harei* on the basis of the evidence then available and largely on similarity in overall size. The recent finding of *magnirostris* in the southern parts of Great Namaqualand, Namibia (Clancey 1989), and the examination of a specimen from the said territory, has occasioned a re-assessment of the case, as this example is not referable to *harei*, resulting in a taxonomic realignment of the bulk of the populations and the introduction of a new name.

The marked west-east pattern of decline in bill-size in the Thick-billed lark (Table 1) closely parallels that present in the Sabota Lark *Mirafra sabota* Smith, which lies mainly to the northeast of *magnirostris*, but with extensive sympatry where their ranges overlap. The range of substrate-types and their attendant vegetational shifts are, however, markedly wider for *M. sabota*, and the extent of its subspeciation is correspondingly greater than in *G. magnirostris*. In dealing with regional variation in bill-size in southern African alaudids, brief mention may be made of the robust bill of the highly localised

TABLE 1
Wing, tail and culmen lengths (mm) in 109 specimens of the Thick-billed Lark *Galerida magnirostris*.

			<i>n</i>	Range	Mean	s.d.
<i>G.m. magnirostris</i>	♂	Wing	15	98–103	100.7	1.53
		Tail	15	54–60	57.6	1.96
		Culmen	15	21.7–23	22.1	0.78
	♀	Wing	8	93–99	96.5	1.72
		Tail	8	54–57	55.5	1.41
		Culmen	8	20.5–22.5	21.4	0.72
<i>G.m. sedentaria</i>	♂	Wing	38	104–110.5	106.7	1.65
		Tail	38	60–68.5	63.4	2.24
		Culmen	38	20–23	21.6	0.87
	♀	Wing	28	98–103	100.6	1.33
		Tail	28	57–64	60.0	1.69
		Culmen	28	19–22.5	20.8	0.91
<i>G.m. harei</i>	♂	Wing	12	102.5–109.5	105.8	2.24
		Tail	12	60–67	63.4	2.53
		Culmen	12	18–20	19.0	0.67
	♀	Wing	8	96–101.5	98.5	1.86
		Tail	8	54.5–60	57.8	2.11
		Culmen	8	18–20	18.5	0.77

Statistical analysis. Wing- and tail-lengths combined, *G.m. magnirostris* ♂♂ (158.36) vs *G.m. sedentaria* ♂♂ (170.23): $t=12.3148$, $df=51$, $P<0.001$. *G.m. magnirostris* ♀♀ (152.06) vs *G.m. sedentaria* ♀♀ (160.48): $t=9.0046$, $df=34$, $P<0.001$. Culmen-length, sexes combined, *G.m. harei* (18.86) vs *G.m. sedentaria* (21.32): $t=10.3041$, $df=84$, $P<0.001$.

sympatric Red Lark *Certhilauda (albescens) burra* (Bangs) of the red sand-dune country immediately south of the lower Orange R. in Bushmanland and adjacent parts of the northwestern Cape Province. In this instance evident correlation between bill-mass and feeding strategy and ground texture is wanting, as the Red Lark favours soft, shifting sandy terrain. It is noteworthy that in these larks there may be extreme plasticity in bill-form within the limits of a single polytypic species inhabiting a wide spectrum of substrate and vegetational complexes, so that bill-size should be used with circumspection as a criterion in the recognition of species-level taxa.

Variability in the Thick-billed Lark's wing- and tail-lengths is limited, with the smaller sized of the two readily definable groupings of populations centred on the Winter Rainfall District of the southwestern Cape and constituting the nominate subspecies. In this population, wings in males are <103, in females <97, and tails respectively <60 and <56 mm. The other populations of the species are on the whole larger: wings in males >102, females >100, tails >80 and >58 mm, with little regional difference between west and east, even in the case of the montane population present in the extreme east of the range. The

populations of *G. magnirostris*, like those of *M. sabota*, polarise on the basis of bill-mass into two well-defined groups, the western heavy-billed differentiates being divisible on the basis of overall size, as outlined above, into two subspecies. For one of these a name is introduced. In the case of the shorter and weaker billed eastern populations, two races are currently recognised, but a critical study of material of both forms—*G. m. harei* and *G. m. montivaga*—indicates that *montivaga* was based on a study of Lesotho specimens (*montivaga*) and others from the Karoo regions of the Cape rather than of *harei* named from the Philipstown district of the northeastern Cape/Orange Free State border region. In effect, *montivaga* is simply a redescription of *harei*. Quicquelberge (1970) also concluded that *montivaga* was poorly differentiated, but again confused the issue by equating *harei* with the birds of the Karoo rather than those present to the immediate east and northeast of this biome.

Conclusions reached as a result of the present enquiry are in close agreement with the earlier findings of Quicquelberge in that three races require to be recognised, but that, in contrast to Quicquelberge's arrangement, the race *G. m. montivaga* will need to be subsumed in the much earlier *G. m. harei*, and the Karoo populations—the *harei* of certain authors, as stated above—accordingly described as a new race.

Heavy-billed western races

Galerida magnirostris magnirostris (Stephens), 1826: Near Cape Town, Cape Province.

Alauda crassirostris Vieillot, 1816, pre-occupied by *Alauda crassirostris* Pennant, 1769.

? *Alauda rostro-crassa* Wilkes, *Encyclopaedia Londinensis*, vol. i 1808, p. 235 (same Levaillant basis as *Alauda magnirostris* Stephens, 1826). See Clancey & Brooke (1990).

Upper-parts with relatively broad black shaft-streaking, the feathers edged greyish Cinnamon-Buff (Ridgway 1912), imparting a mealy effect. Below, breast pale yellowish buff, broadly streaked blackish brown; rest of ventral surface creamy or yellowish white, with the sides washed and streaked greyish. Bill relatively long and robust, but wing- and tail-lengths in both sexes shorter than in the other races (Table 1). Hind-claw $>c.$ 14 mm.

Range. Winter Rainfall District of the southwestern Cape, from about the lower reaches of the Oliphants R. to Cape Agulhas, eastwards to about 22°15'E in the southern Cape. Intergrades with *G. m. sedentaria* to the immediate east of its stated range, as at Oudtshoorn in the southern Cape. Coastal birds to the north of the lower Oliphants, as far as Port Nolloth at 29°14'S, 16°52'E, are like nominate *magnirostris* in colouration, but have the longer wing- and tail-lengths of *sedentaria*. They are best treated as part of this race.

Remarks. Intergradation between *G. m. magnirostris* and *G. m. sedentaria* in the south of the Cape differs from that described in respect of birds from north of the lower Oliphants R., in that a sample from Oudtshoorn, in the Little Karoo, agrees with *sedentaria* in the rufescent colouration of both upper- and under-parts. In their average shorter

wings (in 3 ♀♀ 101.5, 97, 96.5 mm) they incline, however, towards the nominate race lying to the west, but in their tails of 58, 63.5 and 64 mm they correspond entirely with *sedentaria* of the Karoo system.

***Galerida magnirostris sedentaria* subsp. nov.**

Type. ♂, adult. 8 miles west of Khubus (Kuboes), Richtersveld, lower Orange R., northwestern Cape Province. 19 August 1960; collected by Dr M. Courtenay-Latimer. In the collection of the East London Museum, Mus. Reg. No. 8577.

Description. Dorsal streaking browner than in the nominate race (about Mummy Brown), the feather edges redder (Buckthorn Brown, *versus* greyish Cinnamon-Buff). Face more reddish and supercilium deeper buff. On underside with the ground-colour of the breast deeper buff (Light Ochraceous-Buff), the streaking often heavier, and the rest of the venter less clear, more buffy, white. Differs from the nominate race in having a longer wing and tail, the bill similarly robust; mean wing of ♂ 106.7, tail 63.4, ♀ 100.6 and 60.0, *versus* 100.7, 58.6, and 96.5, 55.5 mm respectively in nominate race (Table 1).

Measurements of the type. Wing (flattened) 107, tail 63, tarsus 27, culmen from skull 23, hind-claw 14 mm.

Specimens examined. 70. **Namibia:** 6.1 miles E of Rosh Pinah; **Lower Orange R., Cape Province:** Alexander Bay, Khubus, Arrisdrift, Vioolsdrif, Namies Mine, Pofadder; **Little Namaqualand and Karoo:** Steinkopf, Konkiep, Klipfontein, Springbok, Wallekraal, Vanrhynspas, Vanrhynsdorp, Nieuwoudtville, Calvinia, Williston, Fraserburg, Beaufort West, Aberdeen, Oudtshoorn; **West Griqualand:** Rietfontein (Griquatown).

Range: Southwestern Great Namaqualand, Namibia, with records from Oranjemund and Rosh Pinah, the Richtersveld and Little Namaqualand from the Succulent Karoo of the plateau, eastwards through the Karoo regions of the Cape interior to about Graaff-Reinet (32°15'S, 24°32'E), and north of the mid-Orange to the Karoo country of West Griqualand.

Etymology. *Sedentaria* from Latin to sit, in allusion to the nonmigratory disposition of the species.

Remarks. Attention was first drawn to this race in Clancey (1966: 412), when a more circumscribed range than that now given was favoured. However, in the Second Supplement to my *Catalogue* (Clancey 1972) I adopted Quickelberge's arrangement of the populations into three races, which accords in the main with the grouping adopted here.

Short, slender-billed eastern race

Galerida magnirostris harei (Roberts): 1924: Philipstown, north-eastern Cape.

Calendula magnirostris montivaga Vincent, 1948: Sanqubetu Valley, northeastern Lesotho.

Differs from *G.m. sedentaria* in being less rufous over the upperparts, the dark shaft-streaking Sepia, the light fringes to the feathers dull

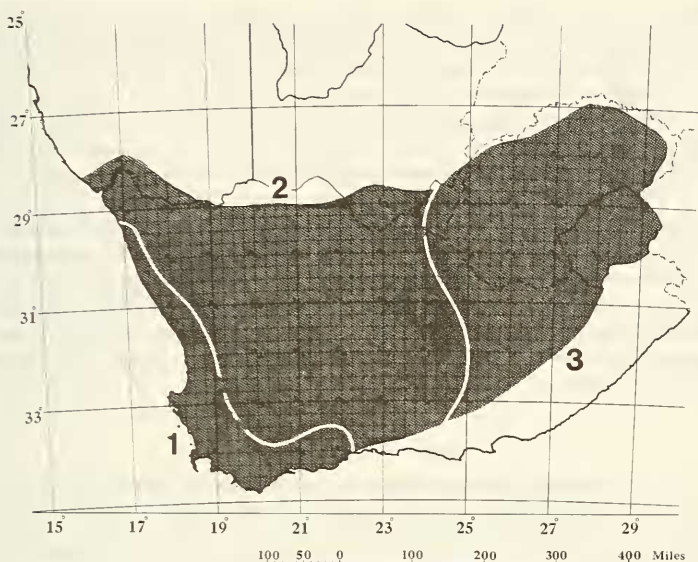


Figure 1. Distribution of the Thick-billed Lark *Galerida magnirostris* and its three subspecies: 1, *G. m. magnirostris* (Stephens); 2, *G. m. sedentaria* Clancey; 3, *G. m. harei* (Roberts). The population of *G. m. magnirostris* distributed narrowly along the coast north of *c.* 31°15'S retains the colour characters of *magnirostris* but has the longer wing and tail measurements of *sedentaria*.

Cinnamon-Buff. Ventrally, breast Light Buff with duller and more greyish-black streaking; rest of underside yellowish-white, lacking the sandy nuance, and in this not unlike the nominate race. Bill shorter and less robust, best marked in the adult male (see Table 1). Hind-claw ranging shorter in both sexes. The coefficient of difference (Mayr *et al.* 1953) for both sexes in the bill-length variable compared with *sedentaria* is 1.42 (just above 92% joint non-overlap); 86 specimens utilised.

Range. Distributed generally to the immediate east and northeast of *sedentaria* from *c.* 24°E and the mid- and upper drainage fan of the Great Fish R. in the eastern Cape to the Orange Free State, Lesotho, southwestern Transvaal (collected at Bloemhof in the Orange Free State in September 1987), and the region of the lower Vaal R. in the eastern sector of the northern Cape. Cold-season altitudinal movement of high elevation breeders results in occurrence of *G. m. harei* in western Natal on occasion.

Remarks. Roberts (1924) gives only a shorter bill as a distinguishing character for this race, and the range as extending from the Orange Free State to the central Cape. He gives the exposed culmen-length in males as 16–18, *versus* 19–21 in the nominate subspecies, and *c.* 14–16 and 18.5 mm respectively in females. The number of specimens

available was not given. Three male and two female topotypes or near-topotypes of *harei* from Philipstown (type-locality), Petrusville district and Philippolis, Orange Free State, had bills from skull 18–20 (19.0), while five *montivaga* from the alpine heights of the Drakensberg in the northeastern Cape and Lesotho also had bills 18–20 (18.7) mm. In a larger sample of material from Lesotho, Quickelberge (1970) determined the average culmen-length from the skull in males to be 19.4 ($n=10$) and in females 18.4 ($n=4$) mm. These data confirm that there is no taxonomically useful difference in bill-length between the birds breeding in the mountains of Lesotho and adjacent territories and those of the northeastern Cape and the western Orange Free State. In addition, as no difference could be found between Lesotho and eastern Cape and Orange Free State specimens in either dorsal or ventral colouration, *montivaga* of 1948 will require to be treated as a synonym of *harei* of 1924.

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References:

- Clancey, P. A. 1963. Notes, mainly systematic, on some birds from the Cape Province. *Durban Mus. Novit.* 8: 248–249.
- Clancey, P. A. 1966. *A Catalogue of Birds of the South African Sub-Region*, part III, *Durban Mus. Novit.* 7: 11.
- Clancey, P. A. 1972. *A Catalogue of Birds of the South African Sub-Region*, Suppl. No. 2. *Durban Mus. Novit.* 9: 12.
- Clancey, P. A. 1989. Taxonomic and distributional findings on some birds from Namibia. *Cimbebasia* 11: 120.
- Clancey, P. A. & Brooke, R. K. 1990. Avian nomenclatural issues arising from the publication of Rookmaaker's *Zoological Exploration of Southern Africa 1650–1790*. *Ostrich* 61: 143–145.
- Quickelberge, C. D. 1970. Taxonomic notes on the Thick-billed Lark *Calandrella magnirostris* (Stephens). *Durban Mus. Novit.* 8: 353–362.
- Ridgway, R. 1912. *Color Standards and Color Nomenclature*. The Author, Washington, D.C.
- Roberts, A. 1924. Classification of S. African birds—some additional notes. *Ann. Transv. Mus.* 10: 86.
- Vincent, J. 1948. New races of a tit-babbler and a lark from the Basutoland Mountains. *Bull. Brit. Orn. Cl.* 68: 145–146.
- Winterbottom, J. M. 1957. Systematic notes on birds of the Cape Province, part V. *Ostrich* 28: 193–194.

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